



Topics

- Item 1 Why is Michigan different— Laws and Rules
- Item 2 Meds in Shortage – Current Problem Meds
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- Item 6 West Michigan System

1 Michigan – how are we different

Why does it matter

MICHIGAN EMS

- EMS services cannot legally purchase or own medications which will be given to patients.
 - Michigan Pharmacy Rules
 - Medical Control Rules
- Hospitals buy meds – typically through contracts and in significant quantities

OTHER STATES

- EMS Services buy medications directly from pharmaceutical distributors.
- Many EMS services are limited to EMS medication vendors and have little buying power.



Michigan – how are we different

What has been a problem in the past actually protects EMS

- The rules and statutes benefit EMS in two primary ways
 - The hospital buying power has allowed EMS in Michigan to avoid many of the significant issues that have been present in other states
- Most other EMS services pay for the meds out of Medicare and Medicaid rates. In Michigan, where we never have paid for meds, EMS doesn't cover this expense.



Legal Material

Ownership of Medications in Michigan

- R 338.493g *Persons to whom drugs may be sold or distributed. Rule 23g. With respect to prescription drugs, a manufacturer or wholesale distributor shall only supply, distribute, sell, offer for sale, barter, or otherwise transfer drugs to persons who are licensed by the board or to persons who are licensed to prescribe drugs in this state.*

History: 1979 AC; 1980 AAC; 1992 AAC.

- R 325.22207 *Medical control authority; protocol development; promulgation of protocols; emergency protocol. Rule 207. (1) Each medical control authority shall establish written protocols as defined in section 20919 of the code, which shall include, but not be limited to all of the following: (k) Written procedures for the security, control, dispensing, and exchange of pharmaceuticals, intravenous solutions, tubing, and related apparatus. Life support agency medication exchange shall only take place with a participating hospital or freestanding surgical outpatient facility. (3) Each medical control authority shall develop specific protocols applicable to the acquisition, storage, and use of drugs, intravenous fluids and medical devices. All drug and intravenous fluids shall be under the control of a pharmacist licensed in this state affiliated with a participating medical control authority hospital or free standing surgical outpatient facility. History: 2004 AAC.*

2 Recent EMS Related Shortages

- Atropine (current shortage is in non-standard dosing)
- Calcium Chloride (manufacturer specific – importing)
- Calcium Gluconate (American Regent – not releasing, alternate dosing is in short supply and is backordered)
- Dextrose 50%, 25%, 5% (increased demand associated with manufacturing delays – some available)
- Epinephrine 1mg/mL (manufacturer specific)
- Epinephrine 1:10,000 (Preloads available, vials not)

Recent EMS Related Shortages

- **Fentanyl Citrate** (Near resolution – may still have trouble getting fentanyl depending on wholesaler. Carpujects are only available from Hospira. Amp and vials are available otherwise)
- **Lidocaine Hcl** (manufacturer specific – available through Amphastar and Hospira – 2%, American Regent Discontinued production)
- **Lorazepam (Ativan)** (alternate dosing available in carpujects)
- **Magnesium Sulfate** (across the board shortage – American Regent discontinued – wholesaler specific)



Recent EMS Related Shortages

- **Morphine Sulfate** (shortage seems to be resolved – carpujects available – new preservative free product introduced to replace the preserved product)
- **Ondansetron (Zofran)** (ampoules and vials available, prefilled syringes appear to only be available from BD)



3 Resolved Shortages

- Diazepam
- Midazolam
- Nalaxone



4 Discontinued

- Cyanide antidote kits
 - Sodium nitrite
 - Amyl nitrite
 - Sodium thiosulfate
- Replacement is the Cyanokit



5 Solutions



Solutions

Extend expirations on current meds

Compounding (local mixing of med)

Change the amount or concentration of what is supplied while maintaining the administration dose

Change the medication to an acceptable and available alternative

Safety is KEY.



One Approach

West Michigan Regional Drug Bag Exchange

- In order to avoid the inherent delays in protocol changes, while considering the urgency of most medication shortages, the West Michigan Region opted to develop a broad plan which allowed for rapid changes while still functioning legally and according to state approved protocols.
- 24 hospitals
- 15 Ambulance Services
- 152 Ambulances/E-Units
- 312 total bags deployed
- 225 narcotics boxes



Three Steps

How to adapt quickly

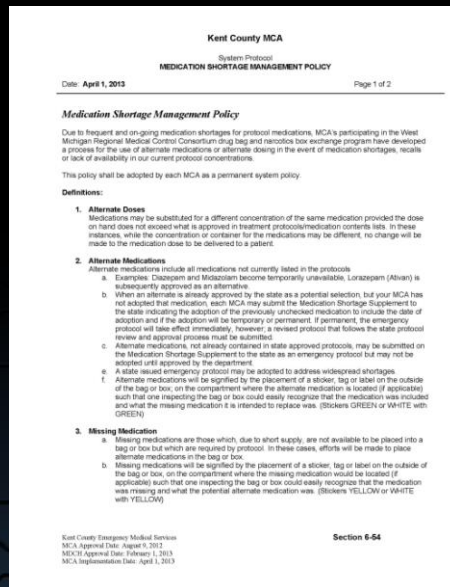


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|---|--|--|
| <ul style="list-style-type: none"> • Alternative Supply • Replace Preloads with vials or ampoules. • Dose stay the same. • No need for a protocol change. • Include any needed tools (syringes, safety needles, etc.) | <ul style="list-style-type: none"> • Alternate Dosing • Replace unavailable meds with the <u>same medication but in a different concentration.</u> • Dose stays the same, amount changes. • No need for a protocol change. • Include any needed tools. | <ul style="list-style-type: none"> • Alternate Medication • Emergency Protocol to make this change. |
|---|--|--|



Implementation

- Large email group –
 - Pharmacy Managers
 - EMS Managers
 - MCA's
- Central Administration, reporting of issues/shortages & accountability
- Single Protocol for shortage management



How have we fared?

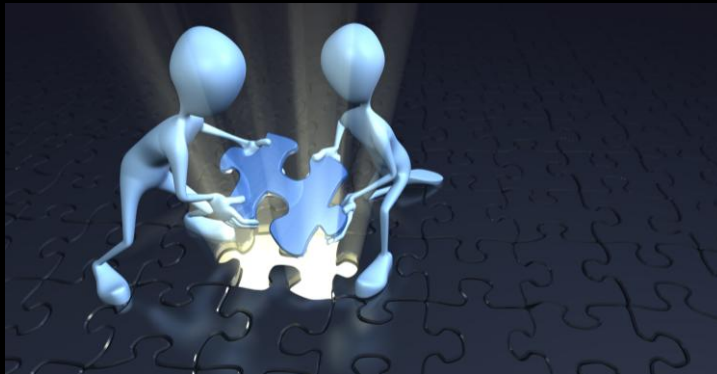
- Of all of the Medication shortages, we needed only one protocol change
- No changes to protocol were required for:
 - Dextrose
 - Calcium
 - Magnesium
 - Zofran
 - Epinephrine
 - Atropine
 - Fentanyl
 - Lidocaine
- Ativan added due to shortage of Diazepam and Midazolam
- Changes were made, by consensus, to the Medication supply list with alternate medications listed



Drug Bag Contents List

Includes approved alternatives

DEEP MIDDLE COMPARTMENT*			
		Acceptable Alternative	
PAR	Item *all preloads must be safety devices	PAR	Item
4	Atropine 1mg/10ml Syringe (preload)		Atropine 1mg/ml VIAL + NS 10ml prefilled syringe
2	Calcium Chloride 10% 10ml Syringe (preload)	1	
2	Dextrose 50% 50ml Syringe (preload)	2	Dextrose 10% 250ml BAG with tubing
2	Diphenhydramine 50mg/mL (preload)		
8	Epinephrine 1mg/10ml Syringe (preload)		(1) Epi 1mg/ml vial + safety needle + NS 10ml PFS
1	Glucagon 1mg w/dilutant (GlucaGen - Bedford)		
3	Lidocaine 2% 100mg/5ml Syringe (preload)		
2	Naloxone 1mg/1mL, 2mL Syringe (preload - leur)		
2	Ondansetron 2mg/ml - 2ml Syringe (preload)		Moved to Outside, side compartment...see below - Alternative listed
2	Sodium Bicarb 50mEq/50ml Syringe (preload)		



Questions?